Bidder. The evidence relating thereto is annexed to this report, and estimates will be found in the appendix. These will, no doubt, be perused with the attention which they deserve, and with that which is due to Sir Frederick Trench as the early proposer and persevering promoter, through a long period, of an embankment of the river.

(To be continued.)

Correspondence.

SHAM SURVEYORS.

SIR,—I have observed in your last week's number of THE BUILDER an article under the head of "Disgraceful Practices of Sham Surveyors," signed "Z." From having been brought up to the profession and practising in it, I have ventured to correct some of your correspondent's statements. I am well aware there are many persons practising as surveyors who have not the least pretension to the name of surveyor, and have not been in any way educated or brought up to the profession. I have endeavoured to shun such men, and have always been at a loss to know upon what capabilities persons who commence business as auctioneers attach to their calling that of surveyor. I believe there are some few exceptions; such as where auctioneers are qualified and have had professional tuition, and can claim to be surveyors; but unfortunately on every auctioneer's card, will be found the word surveyor, and perhaps many of them may have been brought up as farmers, greengrocers, milkmen, &c., and in a variety of businesses quite contrary to that of a profession so intricate as that of a surveyor. It is of this class of surveyors the profession have most to complain.

Your correspondent is most decidedly wrong in his remarks on the very useful (and as may be termed the professional) body of builders' clerks, the major part of whom are men of respectable families, and have been regularly educated and brought up to the profession, both as architects and surveyors, and at great cost to their friends, though by some unforeseen occurrence or for want of sufficient interest to get their abilities put forward in the world, they are obliged to seek employment in builders' offices, and doubtless have been found by builders a very useful body of men. Generally they are persons who derive much practical knowledge (in addition to the theory they have before acquired) from the diversity of business, and in the superintendence of works connected with first-rate men as architects, surveyors and engineers. I do not think the profession has a right to complain of this class of men, unless they will for the future object to take any pupil who would be bound not to act in the capacity of clerk to a builder, which would be quite impossible.

I have known instances of men who have turned surveyors from some separate trade connected with the building business, such as masons, plumbers, and bricklayers, and have presumed to take off quantities for builders, and have through some interested friend been put forward to the detriment of the surveyor of long-standing. I boldly say it is such men as these that the profession and the respectable builder have to exclaim against. Trusting the time will arrive when such nefarious practitioners will cease to exist, I am, Sir,

April 1, 1844. A.

METROPOLITAN BUILDINGS REGULATION BILL.

SIR,—Verily, we poor men engaged in building must be a strange race, if it be absolutely necessary to consider and punish us as common felons. It would seem to be quite enough to visit us with penalties varying from fifty shillings up to twenty pounds for peccadillos; but it seems that we are capable of crimes so enormous as to require a little severer castigation: and two justices of the peace, whether they be Solons or Sir Andrew Agueeheeks, are to have power to fine us from 5*l.* to 100*l.* a day for one kind of offence, and from 5*l.* to 500*l.* a day for another kind of offence; and further, if this mild and fatherly correction should not be enough to bring us to our senses, or should we be so poor that the seizure of all our *sticks* will not raise money enough to liquidate these merciful visitations, we are to be thumb-screwed a little more by imprisonment in the "common gaol or house of correction" for three months or six months, according as we shall be more or less wicked, or more or less poor, and all this at a time when "humanity" is the watchword of the day. It is very difficult to conjecture in what school the concocter of the bill has been bred; but it requires no lantern to find out it was not in the school of loving-kindness. It is to be hoped this loathsome blot will be wiped away, and such penalties only enacted as, while they ensure obedience to the law, will breathe somewhat of the spirit of Christianity. There is indeed some consolation for builders. If they are to be curbed in with bit and bridle by district surveyors, these same gentlemen are shewn not to be a whit more trustworthy, but are to be themselves curbed in by the official referees, and to be subject to correction, fine, and dismissal. They will have a nice life of it, and I fancy that the official referees will find themselves not quite in a bed of clover, at least as far as work goes. But they are to be well paid, and rightly so, if the payment were all righteous; but why the district surveyor is to be paid ten shillings for measuring the width of a street, and which fee he may demand and get from every house in every street, young or old, I am quite at a loss to conceive. Nor can I readily conjecture why justices (who may be fathers or uncles of district surveyors) are to have power to order the district surveyors to be paid for loss of time, or why district surveyors and official referees are to be empowered to assess their own charges. (See clauses 14, 18, 40, 46.) I can suppose that some stripling in legislature may have vanity enough to fancy himself wiser than his forefathers, and set down a new order of rating, and a new enumeration of the stories of a building; and I can laugh at his sapient folly. But when I see the meditated destruction of an enormous amount of house property, which has not only grown up under the fostering care of a solemn Act of Parliament, but which has also been stunted in its growth by that act of the legislature which compelled builders not to make fourth-rate houses of more than 350 superficial feet, and as a necessary consequence, not to make the back rooms 100 feet superficial, I can scarcely suppose that I live in a land where justice has a local habitation. I must hope that this cruel wrong will not be persisted in. This is too serious for a smile; but we may indulge in a little mirth over clause 49, of which the indefiniteness is so perfectly ridiculous, that truly our worthy friend "Punch" must have tried his very funniest hand at it:

"Sometimes to sense, sometimes to nonsense leaning.
And blundering somehow round about a meaning."

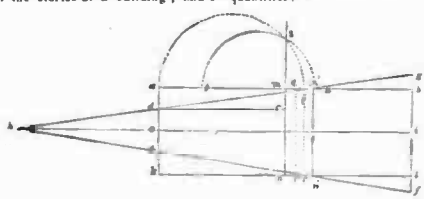
However, Sir, as a whole, the Bill is a very great step in advance of all late attempts, and if it be made just, if it be made merciful, and if it be made easily comprehensible, as with some correction it may be, the metropolis will owe some thanks to its promoters.

I am, Sir, your much obliged servant,

April 9, 1844. BRICKRAT.

CUTTING A TAPERED PLANK.

SIR,—Your correspondent, S. Huggins, says he believes this question, though seemingly simple, cannot be solved but by an algebraic equation of two unknown quantities. I beg to submit the following solution without assuming any quantity, but by simply working the given quantities:—



Let the annexed figure, *d e f g*, represent the plank whose length, *a i*, is equal to *l*, breadth, *f g*, equal to B, and *d e* equal to *c* by the question; produce *g d* and *f e* till they meet in *h*, and draw *h i*. Then, by similar triangles, $\mathbf{B}-c : l :: c : \frac{c\,l}{\mathbf{B}-c}$ or the length *h o* required to complete the triangle *f h g*, for which put *p*.

Then will $\frac{p\,c}{2}$ = the area of the triangle *d h e*.

And $\frac{\mathbf{B}+c}{2}\,l$ = the area of the plank, for which put *a*.

Then $\frac{a}{2}$ = the area of each piece.

Euclid 6 and 19, $\frac{p\,c}{2} : p^2 :: \frac{p\,c}{2} + \frac{a}{2} : p^2 + \frac{a}{c}p$.

And $\sqrt[2]{p^2 + \frac{a}{c}p}$ = the distance from the point *h*, where the plank must be cut.

$\therefore \sqrt[2]{p^2 + \frac{a}{c}p} - p$ = the distance to be measured from the narrow end.

And $l + p - \sqrt[2]{p + \frac{a}{c}p}$ = distance to be measured from the wide end.

And $p : c :: \sqrt[2]{p^2 + \frac{a}{c}p}$: the width of the plank where cut.

$= \frac{c}{p}\sqrt[2]{p^2 + \frac{a}{c}p} = \sqrt[2]{\mathbf{C}^2 + \frac{a}{p}}\ c =$ width of the plank where cut.

But $p = \frac{c\,l}{\mathbf{B}-c}$

$\therefore \sqrt[2]{\frac{c^2\,l^2}{\mathbf{B}-c} + \frac{a}{c} \times \frac{c\,l}{\mathbf{B}-c}} - \frac{c\,l}{\mathbf{B}-c}$ = the distance to be measured from the narrow end, from which we have the following *rule*:—

Divide the product of the length and narrow end by the difference between the two ends, and call it a certain sum; then the area of the plank multiplied by this certain sum and divided by the narrow end, added to the square of the certain sum, and from the square root of the sum last found, subtract the certain sum; the remainder is the distance to be measured from the narrow end, and the square root of the sum last found multiplied by the narrow end and divided by the certain sum, the quotient will be the width of the plank where cut; or, *Geometrically*—

Let the figure, as before, represent the plank, divide the length in two equal parts by the line *m n*, and through *m* and *n* draw the lines *a b*, *k l*, parallel to *h i*; now as the triangle *d a m* equals the triangle *g b m*, and the triangle *k e n* equals the triangle *f l n*, it is clear if the two triangles were cut off the larger trapezoid *m n g f*, and put on the smaller one *d e n m*, and the plank cut on the line *n m*, the two areas would be equal; it is therefore evident, to answer the conditions of the question, the areas of the two triangles must be taken from the larger trapezoid *m n g f*, from its narrow end, and parallel to *m n*; to do which complete the parallelogram *d a m c*, which will equal the area of the two triangles *g b m*, *l n f*, make *m p* equal *m c*, and describe the semicircle *a s p*, cutting *m n* produced in *s*, bisect *m p* by the line *q r*, then it is evident, if the line *q r* equals the line *a m*, a line drawn through *p* would answer the condition of the question; make *m t* equal to *q r*, and describe the semicircle *t s n* through the points *t* and *s*, bisect *u m* by another line *q r*, and make *m t* equal to it, and repeat the operation until the line *q r* shall coincide with the middle of *m n*, then a line drawn through *u*, parallel to *m n*, will be the place where the plank must be cut.

For $q\ r \times m\ u =$ the area of the trapezoid $m\ n\ w\ w$, but $m\ t = q\ r$.

And by Euclid—2nd and 14th, $m\ t \times m\ u = m\ s^2 = q\ r \times m\ u$.

and $m\ a \times m\ c$, or $(m\ p) = \overline{m\ s}^2$;

hence $q\ r \times m\ u = m\ a \times m\ c$, Q. E. D.

I remain yours, &c. P.A. R.

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